

WHAT IS CLAIMED IS:

1. A dual-mode bandpass filter comprising:
 - a dielectric substrate;
 - a resonator electrode disposed at a certain height in said dielectric substrate; and
 - a ground electrode disposed at a different height in said dielectric substrate from said resonator electrode so as to oppose said resonator electrode; wherein
 - said ground electrode includes at least one opening, whereby a resonant electric field of said resonator electrode is controlled to couple two resonant modes generated in said resonator electrode.
2. A dual-mode bandpass filter according to Claim 1, wherein the opening is disposed at a position substantially opposing said resonator electrode.
3. A dual-mode bandpass filter according to Claim 1, wherein said ground electrode is embedded in said dielectric substrate.
4. A dual-mode bandpass filter according to Claim 3, further comprising:
 - a second ground electrode disposed on said dielectric substrate at the ground electrode side opposite to said resonator electrode; and
 - a third ground electrode disposed on said dielectric substrate at the resonator electrode side opposite to said ground electrode.

5. A dual-mode bandpass filter according to Claim 4, wherein the second ground electrode is disposed on the top surface of said dielectric substrate, and the third ground electrode is disposed on the rear surface of said dielectric substrate.

6. A dual-mode bandpass filter according to Claim 1, wherein said ground electrode includes a plurality of openings.

7. A dual-mode bandpass filter according to Claim 1, wherein each opening has one of a substantially rectangular shape, a substantially circular shape, a substantially rhombic shape, and a substantially polygonal shape, in plan view.

8. A dual-mode bandpass filter according to Claim 1, further comprising an input/output coupling circuit coupled with said resonator electrode.

9. A duplexer comprising at least one dual-mode bandpass filter according to Claim 1.

10. A radio communication apparatus comprising the dual-mode bandpass filter according to Claim 1.

11. A radio communication apparatus comprising the duplexer according to Claim 9.